

January 26, 2016 2:46:10 PM

Item ID: D4148-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop ***NS2***

Item Name: Crosstube Lug Plate, Fwd

Start Date: 1/26/2016 **Start Qty:** 30.00

30

Cust Item ID:

Required Date: 2/3/2016 **Req'd Qty:** 30.00

30

Customer:

Reference:

Approvals: Process Plan: SH Date: 20160126 To: _____

Tooling:

Date:

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4148	E

100

0.00

100

Waterjet

FLOW CNC Waterjet

Memo

0.08

Cut as per dwg D4148

Prog Rev: 5

Dwg Rev: E

OPEN HOLES TO SIZE AS PER DWG

Deburr as required

110

QC2- Inspect parts off machine FAI/FAIB

0.00

1 10

QC

Quality Control

Memo

0.01

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 141624

141624

Page 2

January 26, 2016 2:46:10 PM

Item ID: D4148-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Lug Plate, Fwd
 Start Date: 1/26/2016 Start Qty: 30.00 ***30*** Cust Item ID:
 Required Date: 2/3/2016 Req'd Qty: 30.00 ***30*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.01							DAS 38 9-89
Quality Control									FEB 01 2016
150	Identify as per dwg & Stock Location: <u>Stock</u>	0.00							
150									
Packaging	Memo	0.01							33 DAS 6 9-89
Packaging									FEB 01 2016
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.05							MCS FEB 01 2016
Quality Control									

MCS FEB 01 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

January 26, 2016 2:46:17 PM

Page 1

Work Order ID: 141624

141624

Parent Item: D4148-1

D4148-1

Parent Item Name: Crosstube Lug Plate, Fwd

Start Date: 1/26/2016

Required Date: 2/3/2016

Start Qty: 30.00

Required Qty: 30.00

Comments:

IPP Rev:A 10.06.24 new issue DD verf:EC

IPP Rev:B 10.10.29 as per revC DD verf:EC

11.03.02 AS PER DWG REV.D DD VERF:EC

IPP REV:C

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S11GA		Purchased	No			100	sf	82.9150	0.3607	11.39053			

M304S11GA

304/316 0.125 Sheet

12/16/01/26

Location

MAT020

Loc Qty

82.91498

Loc Code

M128254

23.64

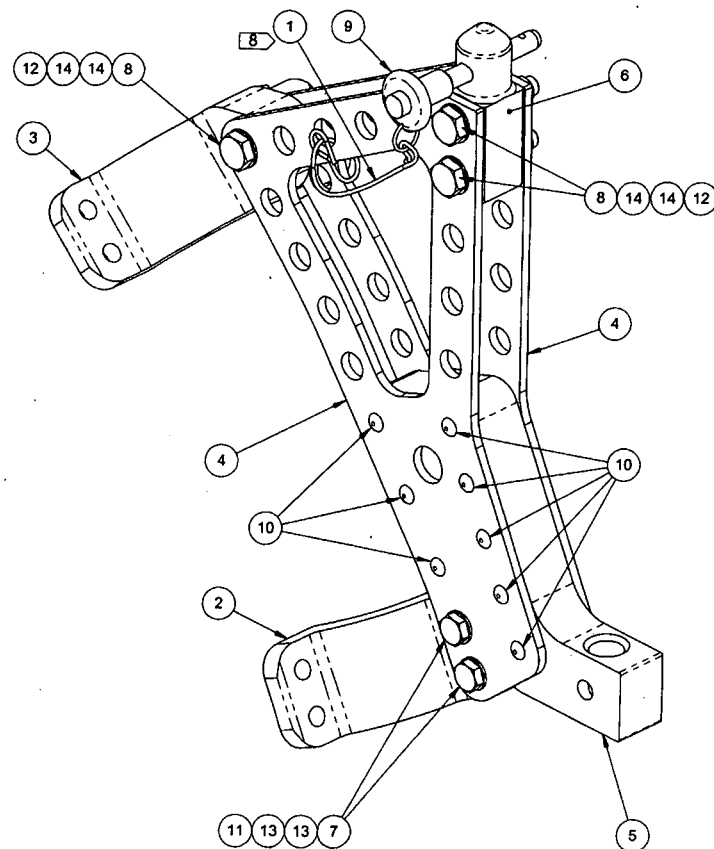
M129545

29.37498

M129972

29.9

12.5



D4148-041 FWD X-TUBE LUG ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4148-041" PER DART QSI 044 6.1
- 7) WEIGHT: 3.66 lbs
- 8) ATTACH D2690-6 TO D4148-1 BY LOOPING AROUND A LIGHTENING HOLE FIRST AND THEN SECURE TO MS17984-C413

ITEM	QTY -041	P/N	DESCRIPTION
	X	D4148-041	FWD X-TUBE LUG ASSY
1	1	D2690-6	LANYARD
2	1	D3910-1	X-TUBE LUG
3	1	D4091-1	MOUNTING LUG
4	2	D4148-1	FWD X-TUBE LUG PLATE
5	1	D4148-3	STUD RECEIVER LOWER
6	1	D4148-5	EYEBOLT STUD
7	2	AN3C12A	BOLT
8	3	AN4C13A	BOLT
9	1	MS17984-C413	PIN, QUICK RELEASE
10	8	MS20615-4M18	RIVET, SOLID, PAN-HEAD
11	2	MS21043C3	NUT, SELF-LOCKING
12	3	MS21043C4	NUT, SELF-LOCKING
13	4	NAS1149C0332R	WASHER
14	6	NAS1149C0432R	WASHER

RELEASED
2013-08-16

28160126

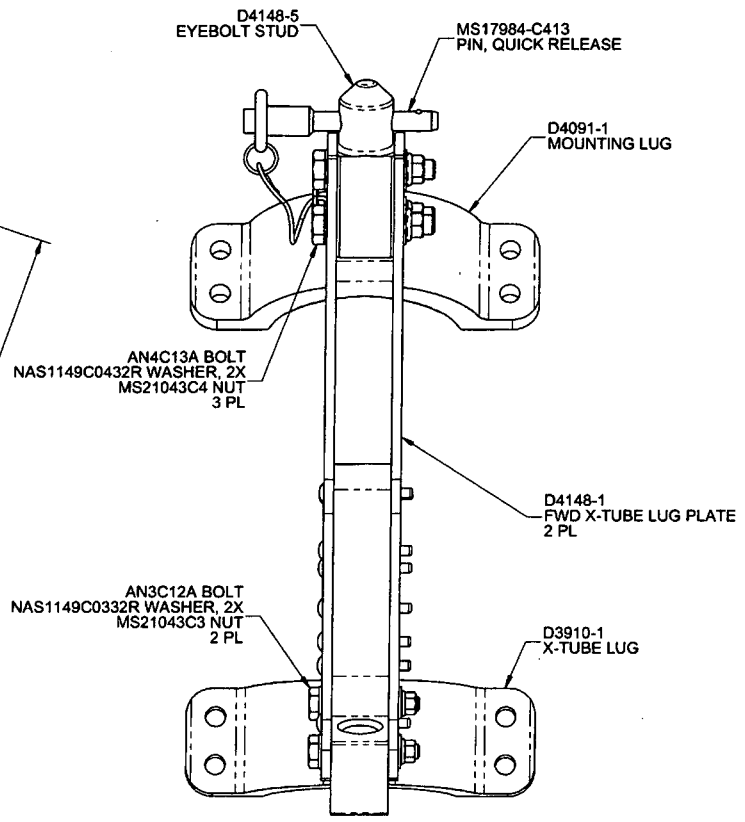
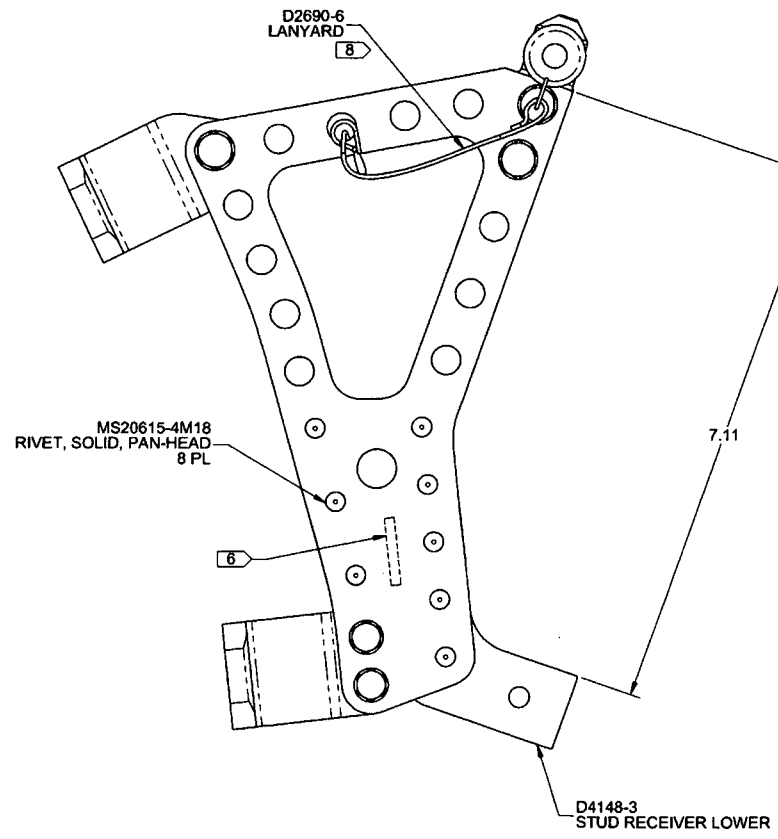
SA-101624

E	B6-4 Ø0.286 HOLE ADDED FOR CARGO TUBE INSTALLATIONS.	AJS	13.07.22
D	HOLE DIA CHANGED TO 0.250" (D6-3); HOLE DIA CHANGED TO 0.250" (C8-5); REPLACED QTY(2) AN3C12A, MS21043C3 AND QTY(4) NAS1149C0332R WITH QTY(2) AN4C13A, MS21043C4 AND QTY(4) NAS1149C0432R (D3-1, C4-2)	SC	11.02.22
C	REDESIGNED D4148-1/3 TO ADDRESS COMPATIBILITY ISSUES WITH D350-591 SHORT STEPS	MB	10.10.12
B	REPLACED QTY(3) MS20615-4M18 WITH QTY(2) EACH AN3C12A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1, B7-2 & B4-2); MS20615-4M18 WAS MS20615-4M20 (ZN D3-1 & B7-2); Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN D6-3); Ø0.129 7 PL WAS 10 PL (ZN A7-3); Ø0.191 WAS 0.129 (ZN C8-5) REASON: SEE TR-D350-007-2 REV. B.	MB	10.07.05
A	NEW ISSUE	MB	10.06.18
REV.	DESCRIPTION	BY	DATE

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	JP	DRAWING NO.	REV. E
MFG. APPR.	WJ	D4148	SHEET 1 OF 5
APPROVED	WJ	TITLE	SCALE
DE APPR.	WJ	FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1

D
C
B
A

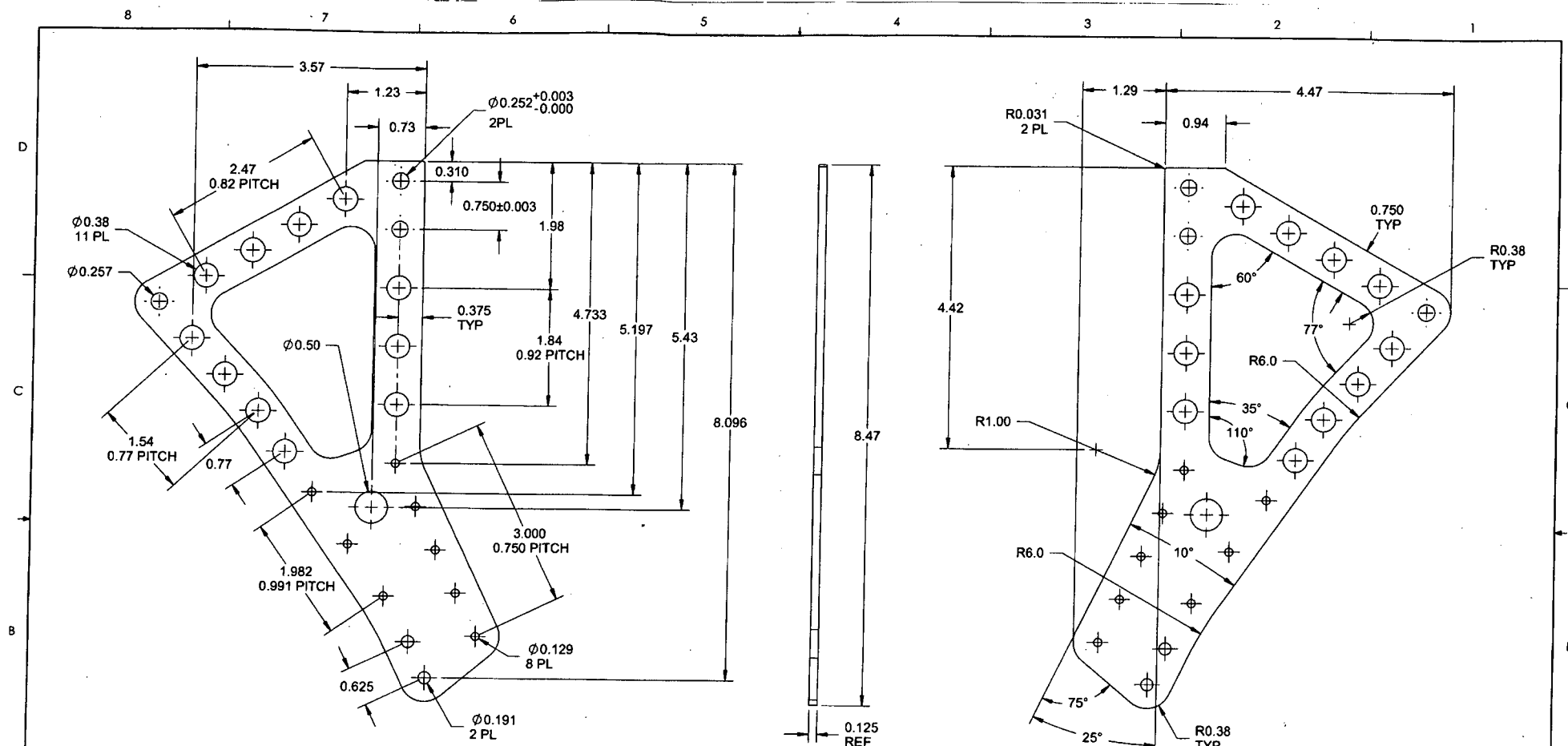


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2013-08-16

D4148-041 FWD X-TUBE LUG ASSY

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO. D4148	REV. E SHEET 2 OF 5
MFG. APPR.	<i>[Signature]</i>	TITLE	SCALE
APPROVED	<i>[Signature]</i>	FWD X-TUBE LUG ASSY	NTS
DE APPR.	<i>[Signature]</i>	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	13.07.22		

8 7 6 5 4 3 2 1



D4148-1 FWD X-TUBE LUG PLATE

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.52 lbs

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2013-08-16

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DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 3 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1

D

C

B

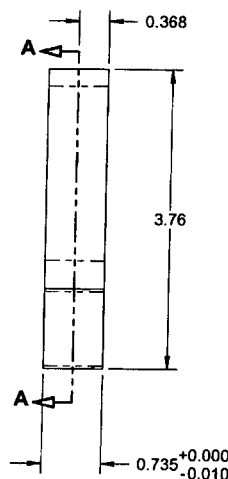
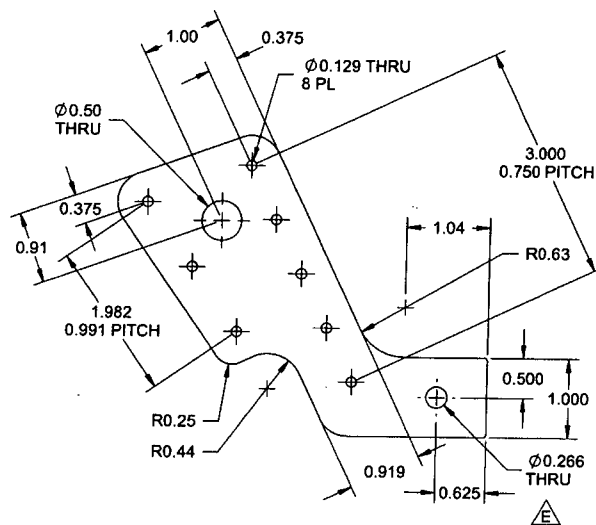
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D

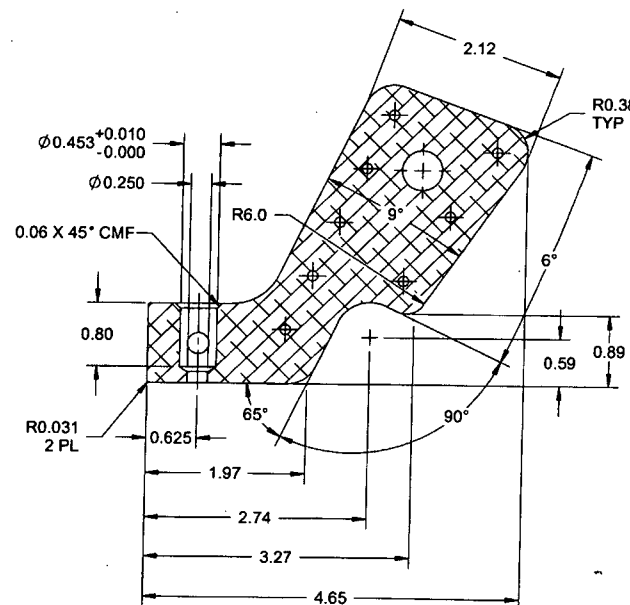
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B

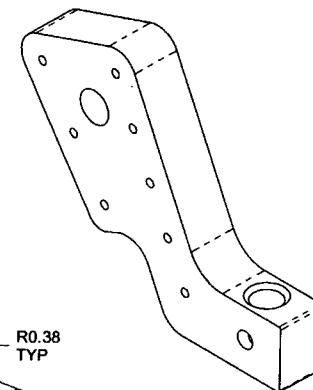
A



D4148-3 STUD RECEIVER LOWER



SECTION A-A



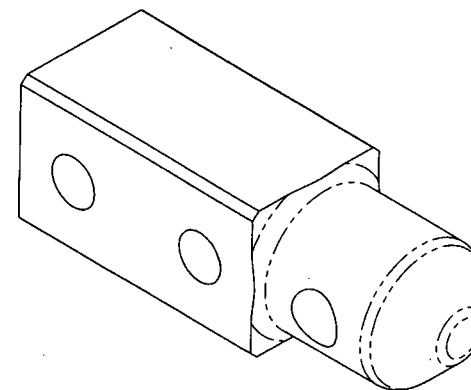
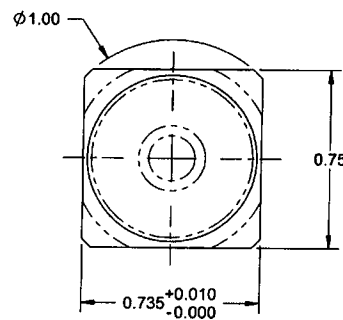
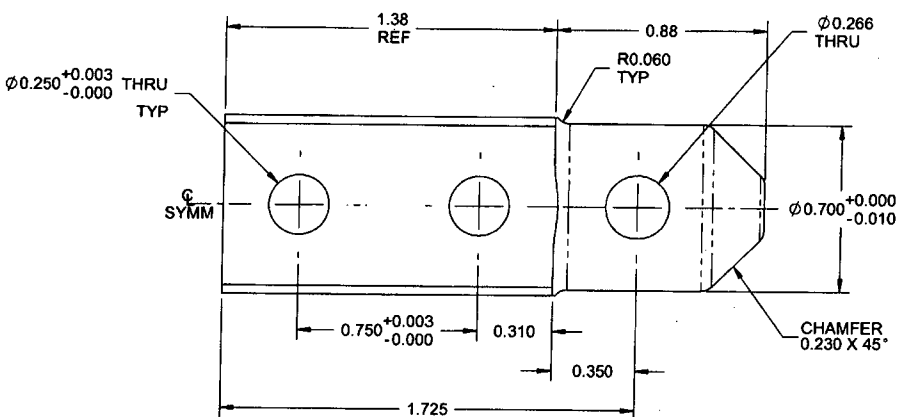
RELEASED
2013-08-16

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.51 lbs

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 4 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1



D4148-5 EYEBOLT STUD

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.27 lbs

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 5 OF 5
APPROVED		TITLE	SCALE
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RELEASE
2013-08-16

DART AEROSPACE LTD		Work Order:	141624.
Description: Fwd Crosstube Lug Plate		Part Number:	D4148-1
Inspection Dwg: D4148 Rev: E		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	Ø.129	/		V:Ø-02	
Ø0.191	+0.005/-0.001	Ø.191	/		V:Ø-01	
Ø0.38	+0.006/-0.001	Ø.376	/		Tap	
Ø0.257	+0.006/-0.001	Ø	/			
Ø0.50	+0.008/-0.001	Ø.499	/			
0.94	+/-0.030	.94	/			
4.47	+/-0.030	4.47	/			
0.750	+/-0.010	.757	/			
8.47	+/-0.030	8.47	/			
8.096	+/-0.010	8.098	/			
5.43	+/-0.030	5.43	/			
5.197	+/-0.010	5.199	/			
4.733	+/-0.010	4.732	/			
0.310	+/-0.010	.311	/			
0.750	+0.003/-0.010	.750	/			
0.375	+/-0.010	.380	/			
1.84	+/-0.030	1.84	/			
0.92	+/-0.030	.92	/			
3.000	+/-0.010	3.001	/			
0.750	+/-0.010	.749	/			
0.625	+/-0.010	.628	/			
1.982	+/-0.010	1.981	/			
0.991	+/-0.010	.990	/			
0.77	+/-0.030	.77	/			
1.54	+/-0.030	1.54	/			
2.47	+/-0.030	2.47	/			
0.82	+/-0.030	.82	/			
3.57	+/-0.030	3.57	/			
1.23	+/-0.030	1.23	/			
0.73	+/-0.030	.73	/			
0.125	+/-0.010	.116	/			
Ø0.252	+0.003/-0.000	Ø	✓ DAS			

Measured by:	KJ	Audited by:	SS 9-89	Preliminary Approval:	
Date:	16/01/27	Date:	16-02-01	Date:	

Rev	Date	Change	Revised by	Approved
A	10.08.04	New Issue	KJ	
B	10.10.08	Dwg Rev updated	KJ	
C	10.11.05	Dimensions updated per Dwg Rev C	KJ	
D	11.03.08	Dwg Rev updated	KJ	
E	12.02.01	Dimensions updated per Dwg Rev D	KJ	
F	13.11.26	Dwg Rev updated	KJ	